

**IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

STINGRAY IP SOLUTIONS, LLC,

Plaintiff,

V.

**SIGNIFY N.V.,
SIGNIFY (CHINA) INVESTMENT CO.,
LTD.,
SIGNIFY HONG KONG LIMITED,
SIGNIFY NETHERLANDS B.V., and
SIGNIFY POLAND SP. Z.O.O.,**

Defendants.

**C.A. No. 2:21-CV-00043-JRG
(lead case)
C.A. No. 2:21-CV-00044-JRG
(consolidated)**

JURY TRIAL DEMANDED

PLAINTIFF'S OPENING CLAIM CONSTRUCTION BRIEF

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Exhibit B	U.S. Patent No. 6,961,310 (“the ’310 patent”)
Exhibit C	U.S. Patent No. 7,027,426 (“the ’426 patent”)
Exhibit D	U.S. Patent No. 7,082,117 (“the ’117 patent”)
Exhibit E	U.S. Patent No. 7,224,678 (“the ’678 patent”)
Exhibit F	U.S. Patent No. 7,616,961 (“the ’961 patent”)
Exhibit G	U.S. Patent No. 7,440,572 (“the ’572 patent”)
Exhibit H	Declaration of Dr. Vijay K. Madiseti (“Ex. H” or “Madiseti Decl.”)
Exhibit I	STINGRAY IP_00754-60 (definitions of “mobile”)
Exhibit J	Pages from Routing Protocol Performance Issues and Evaluation Considerations by Corson & Macker (1998) (SIGNIFYCC_00000791, 793)
Exhibit K	Pages from IEEE 802.11 (1999) (SIGNIFYCC_00000812, 828)
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I. INTRODUCTION

Pursuant to P.R. 4-5(a) and the Court’s Docket Control Order of August 18, 2021 (Dkt. Nos. 19), Plaintiff Stingray IP Solutions, LLC (“Plaintiff” or “Stingray”) hereby files its Opening Claim Construction Brief. Stingray asserts a total of seven patents in its First Amended Complaints for Patent Infringement, Dkt. Nos. 15 in each of C.A. Nos. 2:21-CV-00043-JRG and 2:21-CV-00044-JRG against Defendant Signify N.V. (“Defendant” or “Signify”). The asserted patents in the above referenced actions are U.S. Patent Nos. 6,958,986 (the “986 patent”), 6,961,310 (the “310 patent”), and 7,027,426 (the “426 patent”) asserted in the -00043 case and U.S. Patent Nos. 7,082,117 (the “117 patent”), 7,224,678 (the “678 patent”), 7,440,572 (the “572 patent”), and 7,616,961 (“the “961 patent”) asserted in the -00044 case (collectively, the “patents-in-suit”).

Stingray proposes claim constructions herein that are reasonable, consistent with the plain and ordinary meaning of terms, and based on the intrinsic records of the patents. To the contrary, Signify’s claim construction positions are each plagued with one or more of the following flaws: (1) Signify improperly limits the scope of claim terms by injecting limitations that are inconsistent with the plain meaning and exclude embodiments of the patents; (2) Signify argues indefiniteness without regard for the abilities of a person of ordinary skill to understand well-known technologies and apply the unambiguous plain meaning of claim term; and (3) Signify seeks to improperly stretch § 112 ¶ 6 to apply where it should not, and thereby argues that well-understood claim terms with significant structure are indefinite. Because these flaws violate accepted claim construction principles and permeate Signify’s positions, they should be rejected.

II. APPLICABLE LAW

A. A Claim Should Be Given the Full Range of Its Ordinary Meaning.

The claims of a patent “define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (citation omitted).

Consequently, “[c]laim construction begins with the language of the claim.” *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1360 (Fed. Cir. 2013). Claim terms generally receive their ordinary and customary meaning, which is the meaning that a person of ordinary skill in the art (“POSITA”) would have understood the claim term to have as of the filing date of the patent application. *Phillips*, 415 F.3d at 1313. “[U]nless compelled to do otherwise, a court will give a claim term the full range of its ordinary meaning as understood by an artisan of ordinary skill.” *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001).

There are “only two exceptions to [the] general rule” that claim terms are construed according to their plain and ordinary meaning: “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either in the specification or during prosecution.” *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d 1362, 1365 (Fed. Cir. 2014) (quoting *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)); *see also GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (“[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal.”). The standards for finding lexicography or disavowal are “exacting.” *GE Lighting Solutions*, 750 F.3d at 1309.

To act as his own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term,” and “clearly express an intent to define the term.” *Id.* (quoting *Thorner*, 669 F.3d at 1365). The patentee's lexicography must appear “with reasonable clarity, deliberateness, and precision.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). To disavow or disclaim the full scope of a claim term, the patentee's statements in the specification or prosecution history must amount to a “clear and unmistakable” surrender. *Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009).

B. A Claim Should Be Construed in Light of the Specification, Without Reading Limitations into the Claims.

Notwithstanding the primacy of the claim language, courts interpret claim language “in light of the intrinsic evidence of record, including the written description, the drawings, and the prosecution history.” *Power Integrations*, 711 F.3d at 1360 (citation omitted). The specification can be useful, for example, to “determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning.” *Vitronics Corp. v. Conceptiontronic*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Additionally, “[i]diosyncratic language, highly technical terms, or terms coined by the inventor are best understood by reference to the specification.” *3M Innovation Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1321 (Fed. Cir. 2013). Although the specification can be a useful guide to how the inventor used a disputed term, “limitations discussed in the specification may not be read into the claims.” *Id.*; see also *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009). Indeed, the Federal Circuit has repeatedly held that courts may not import limitations from embodiments disclosed in the specification in order to limit or otherwise vary the meaning of the claim language. *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 905-06 (Fed. Cir. 2004); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327-28 (Fed. Cir. 2002); *Inverness Med. Switzerland GmbH v. Warner Lambert Co.*, 309 F.3d 1373, 1379 (Fed. Cir. 2002) (“It is improper to limit the claim based on a preferred embodiment of the invention.”).

Extrinsic evidence may “help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean,” but such evidence should be considered in the context of the intrinsic record. *Phillips*, 415 F.3d at 1319. Extrinsic evidence cannot be used to “vary, contradict, expand, or limit the claim language from how it is defined, even by implication, in the specification or file history.” *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Grp., Inc.*, 262 F.3d 1258, 1269 (Fed. Cir. 2001).

C. 35 U.S.C. § 112 ¶ 6 Does Not Apply if There Is Sufficient Structure Within the Claim Itself to Perform the Recited Function.

Under 35 U.S.C. § 112 ¶ 6, a patentee may elect to express a claim limitation as a means for performing a specified function, without reciting a particular structure. *See Inventio AG v. Thyssenkrupp Elevator Ams.*, 649 F.3d 1350, 1355-56 (Fed. Cir. 2011). Such elements are construed to cover the corresponding structure clearly linked or associated with the claimed function in the specification or file history, and equivalents of those structures. *Med Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1219 (Fed. Cir. 2003).

Use of the word “means” creates a presumption that § 112, ¶ 6 applies. *Personalized Media Commc’ns, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 703 (Fed. Cir. 1998). Conversely, “the failure to use the word ‘means’ creates a presumption that § 112, ¶ 6 does not apply.” *Id.* at 703–04; *see also Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc). “[W]hen a claim term lacks the word ‘means,’ the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1348 (citations omitted). Where a claim recites a function, but also provides “sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format.” *Personalized Media*, 161 F.3d at 704.

When it applies, § 112, ¶ 6 limits the scope of the functional term “to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof.” *Williamson*, 792 F.3d at 1347. Construing a means-plus-function limitation involves two steps. “The first step . . . is a determination of the function of the means-plus-function limitation.” *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). “[T]he next step is to determine the corresponding structure disclosed in the specification

and equivalents thereof.” *Id.* This step cannot include “incorporation of structure from the written description beyond that necessary to perform the claimed function.” *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

III. DISPUTED TERMS AND PHRASES

A. Preambles of the Asserted Claims

Signify proposes that the preambles of claim 25 of the ’986 patent, claim 13 of the ’310 patent, claim 8 of the ’426 patent, claims 24 and 55 of the ’117 patent, claim 51 of the ’678 patent, and claim 1 of the ’961 patent are each limiting. *See* Dkt. No. 53, Ex. B. The preamble of a claim is not limiting if “a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). In arguing that each preamble is limiting, Signify does not propose to construe any language in the preambles, other than terms that appear elsewhere in the body of the claims. *See* Dkt. No. 53, Ex. B at pp. 1, 8, 17, 23, 26 (merely stating “Preamble is limiting”). Indeed, each of the preambles identified consists only of language that states a purpose or intended use of the invention, but the structure and essential steps are fully contained in the body of the claims.

These preambles are each not limiting because none recite “essential structure” or any essential step, in the case of a method, and the preambles are not “necessary to give life, meaning, and vitality” to the claims. *Catalina Mktg.*, 289 F.3d at 808. Instead, each preamble uses the word “for” to indicate that what follows is a recitation of the intended purpose or use of the claimed invention. For instance, the preamble of claim 25 of the ’986 patent recites only a purpose or intended use of the claimed invention, providing that the method is “for a wireless communications network” The preamble of claim 13 of the ’310 patent states merely a purpose or intended use of the claimed invention, providing that the method is “for routing message data from a source

node to a destination node in a mobile ad hoc network” The preamble of claim 8 of the ’426 patent states merely a purpose or intended use of the claimed invention, providing that the method is “for operating a mobile ad hoc network” The preamble of claim 55 of the ’117 patent states merely a purpose or intended use of the claimed invention, providing that the method is “for a mobile ad-hoc network (MANET)” The preamble of claim 51 of the ’678 patent states merely a purpose or intended use of the claimed invention, providing that the method is “for a wireless local or metropolitan area network” The preamble of claim 1 of the ’961 patent states merely a purpose or intended use of the claimed invention, providing that the method is “for dynamic channel allocation in a mobile ad hoc network” Indeed, the essential steps of each claimed method appear wholly in the body of the claim. In other words, the appearance of the term “mobile nodes” or “mobile ad hoc network”/ “MANET” in the preamble is not “necessary to give life, meaning, and vitality” to any of these claims. Those terms merely provide the intended application and context for performing the method steps recited in the body of the claims.

Regarding claim 24 of the ’117 patent, the preamble recites a “mobile ad-hoc network (MANET).” This preamble, however, is not limiting because the body of the claim defines a structurally complete invention that provides limitations relating to “a plurality of nodes” and a “policing node.” The appearance of the term “mobile ad hoc network” or “MANET” in the preamble and the body provides merely the context in which the claimed invention is intended to operate, without limiting the claimed invention to applicability in solely a “mobile ad hoc” type network. Moreover, the specification states that “the policing node may also advantageously detect intrusions into the wireless network,” indicating the patentee intended the claimed network for use in not only a MANET but also other suitable wireless networks. *See* ’117 patent, 2:61-63. Accordingly, for the foregoing reasons, the preamble of claim 25 of the ’986 patent, claim 13 of

the '310 patent, claim 8 of the '426 patent, claims 24 and 55 of the '117 patent, claim 51 of the '678 patent, and claim 1 of the '961 patent should each be found to be non-limiting.

B. “mobile node(s)” (Claims 9, 25 of the '986 patent; Claim 13 of the '310 patent; Claims 8, 18 of the '426 patent; Claim 1 of the '961 patent)¹

Stingray’s Construction	Signify’s Construction
“a device in a wireless communications network that can be moved”	“a node that is movable while in use; not a fixed node”

The parties agree that the term “mobile node(s)” means that the node (or device) “can be moved” or “is movable.” The parties also agree that this term should be construed the same for all patents-in-suit. The dispute between the parties focuses on Signify’s attempt to narrow the meaning to require that the mobile node be movable “*while in use*.” This additional limitation narrows the claim term beyond its plain meaning and such additional restriction is not supported by the patent or the understanding of a person of ordinary skill in the art.

As used by the patents, the term “mobile” is used to connote two functional aspects of the nodes it describes. First, the term “mobile” connotes that the device or node that it describes is part of a wireless network. Madisetti Decl., ¶¶ 25, 27. This is reflected both in the asserted claims and the patent specification. For example, each of the claims that recites a “mobile node(s)” also states that the mobile nodes are part of a “wireless” network or connected to other nodes via “wireless” links. *Id.*; *see also* '986 patent, claims 9, 25; '310 patent, claim 13; '426 patent, claims 8, 18; '961 patent, claim 1. Further, the patent specifications describe the “wireless” functionality as being a key aspect of the mobile nodes: “The nodes 30, such as laptop computers, personal digital assistants (PDAs) or mobile phones, are connected by wireless communication links 32 as would be appreciated by the skilled artisan.” '426 patent at 4:63-66; *see also* Madisetti Decl., ¶ 27.

¹ Where this term is used in the preamble of a claim only, Stingray maintains that the preamble is not limiting. However, if found limiting the claim construction provided here should apply.

Second, the term “mobile” indicates that the device can be moved. *Id.* at ¶¶ 25, 28. This aspect of the “mobile node” is not disputed by Signify. *See* Dkt. No. 53-2 (Signify’s construction acknowledging that the mobile node is “movable”). But Signify significantly restricts the meaning of “mobile node” by insisting that the node be “movable *while in use*.” This restriction is not supported by any of the patents. Indeed, none of the patents distinguish between nodes that are “in use” and “not in use.” *Id.* at ¶ 32. The plain meaning of the term “mobile” also does not reflect this restriction. *See id.* at ¶ 30 (*citing* Webster’s Encyclopedic Unabridged Dictionary of the English Language, 1996 as defining “mobile” to mean “capable of moving or being moved readily”; *also* Merriam-Webster defining “mobile” as “capable of moving or being moved,” each attached herein as Exhibit I). The mobility inferred by the term “mobile” as it is used by the patents-in-suit to describe a node in a wireless network is independent of whether the node is “in use,” and a person of ordinary skill in the art would not apply a “while in use” limitation to distinguish a mobile node or from a *non*-mobile node. Madisetti Decl. at ¶¶ 32-33. For example, the patent indicates the effect on the network of the changing *location* of nodes within the network topology, but not how the movement of the node *while in use* may affect the network. *See, e.g.,* ’986 patent at 16:20-24 (referring to nodes “alert[ing] any other node that move[s] within range that the two nodes can be neighbor nodes.”); *see also* ’426 patent at 1:32-34 (“nodes must self-organize and reconfigure as they move, join or leave the network.”). Signify’s “while in use” restriction is overly narrow and unsupported.

Signify’s construction has additional flaws. The term “in use” is vague and injects ambiguity to the term. *Id.* When is a node “in use?” Further, Signify’s requirement that a mobile node has to be “movable while in use” excludes preferred embodiments disclosed by the patents. For example, “computers” are not *necessarily* “movable while in use.” *See* ’426 patent at 1:25-29;

Madisetti Decl. at ¶ 32. And while the patent describes nodes as “*often* powered by batteries,” this explicitly non-restrictive language allows for nodes that are not powered by batteries and thus may require a wired power source, restricting its movement while in use. ’426 patent at 1:37-39.

The addition of the phrase “not a fixed node” to Signify’s construction is unnecessary and vague. Madisetti Decl. at ¶ 33. Again, neither the claims, the specification, nor any statements in the prosecution history distinguish between nodes that are “fixed” and “not fixed.” Including such language injects ambiguity. The patents simply do not use this term to distinguish a mobile node from another type of node. Signify cites extrinsic evidence from the IEEE 802.11 (1999) and IEEE 802.15.4 (2003) standards documents, which to some extent utilize terms such as “fixed, portable, and moving stations [or devices]” and “mobile stations [or devices].” However, because the patents do not incorporate these standards into their disclosure, such extrinsic evidence should not affect the meaning of “mobile node” as it applies to these patents. *Id.* For example, in those specifications, three categories of stations were clearly defined—moving, portable, and fixed. And where the specification intended to infer movement “while in use,” it used the label “*moving*,” not “mobile.” None of the patents-in-suit identify “moving,” “portable,” or “fixed” nodes as means to distinguish or define a “mobile” node. *Id.* Without any indication that the patentee intended for such restrictions to apply to the claimed invention, importing these limitations would be an error.

C. “mobile ad hoc network” / “MANET” (Claim 13 of the ’310 patent; Claims 8, 18 of the ’426 patent; Claims 24, 55 of the ’117 patent; Claim 1 of the ’961 patent)²

Stingray’s Construction	Signify’s Construction
“a network consisting of a number of geographically-distributed, potentially mobile nodes wirelessly connected by one or more radio frequency channels, which lacks fixed infrastructure such that nodes must self-	“a network consisting of only a number of geographically-distributed, mobile nodes wirelessly connected by one or more radio frequency channels, which lacks any fixed infrastructure”

² Where this term is used in the preamble of a claim only, Stingray maintains that the preamble is not limiting. However, if found limiting, the claim construction provided here should apply.

organize and reconfigure as they move, join or leave the network”	
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The parties propose similar definitions for “mobile ad hoc network,” both derived from language in the specification of the ’426 patent. But whereas Stingray’s construction quotes directly from the patent specification, without modification, Signify’s construction injects significant limitations to the meaning of “mobile ad hoc network” that disregards the broader meaning of the term explicitly provided by the patent specification. *See* ’426 patent at 1:12-45.

Stingray’s definition of mobile ad hoc network is a direct quote from column 1 of the ’426 patent specification, including excerpts from lines 13-16, 18-19, and 32-34 that describe the key characteristics of such a network. That this portion of the ’426 patent accurately defines a “mobile ad hoc network” is not disputed, as Signify’s construction is also derived from this same disclosure. But where the patent states explicitly that “a mobile ad hoc network includes a number of geographically-distributed, *potentially* mobile nodes . . .” (emphasis added), Signify has replaced the broader “potentially” with the much more restrictive term “only” in its proposed construction. This blatant manipulation of the specification is unjustifiable. Indeed, Signify’s narrowing of the definition would exclude any node in the network other than a “mobile node.” This is both impractical and excludes preferred embodiments of the patents-in-suit. For example, the ’117 patent explicitly acknowledges that the mobile ad hoc network may use nodes other than a mobile node, e.g., fixed nodes: “in some embodiments one or more nodes in the MANET 10 may be fixed to provide a bridge to a wired (or satellite) communications infrastructure, such as a telephone network, for example.” ’117 patent at 5:37-41. Signify’s overly narrow construction would improperly exclude such embodiments. The ’426 patent also confirms the flexibility of the mobile ad hoc network to include nodes other than “mobile nodes” when it describes the nodes included

in the network to be “*potentially* mobile.” Signify’s attempt to remove this flexibility and broader meaning of a mobile ad hoc network should be rejected.

The parties’ respective constructions also both include that a mobile ad hoc network lacks “fixed infrastructure,” as described by the ’426 patent. *See* ’426 patent at 1:17-19. But the parties disagree whether this language—“lacks fixed infrastructure”—benefits from additional explanatory language to describe what is meant. To this end, Stingray’s construction proposes the inclusion of additional language that explains how this lack of “fixed infrastructure” impacts the nodes in the network. Namely, the ’426 patent specification explains that “[d]ue to the lack of a fixed infrastructure, nodes must self-organize and reconfigure as they move, join or leave the network.” *Id.* at 1:32-34. This ability of nodes to “self-organize and reconfigure” in particular describes the “ad hoc” nature of the network. Because the ’426 patent itself describes this as “the most distinctive feature of mobile ad hoc networks,” inclusion of this explanatory language in the definition is necessary. Where Signify has omitted such explanation, Stingray’s construction makes explicit this important feature of a mobile ad hoc network: “lacks fixed infrastructure *such that nodes must self-organize and reconfigure as they move, join or leave the network.*”

D. “semi-permanent time slots” (Claims 9 and 25 of the ’986 patent)

Stingray’s Construction	Signify’s Construction
“time slots reserved for communication links between neighboring mobile nodes”	“time slots used to establish communication links to neighboring mobile nodes and are reserved for the duration of that link across a series of frames”

The parties agree that “semi-permanent time slots” are “time slots” reserved for communication links between neighboring nodes.” The dispute here is Signify’s attempt to add additional limitations to the definition that are unsupported by the patent and intrinsic record. In particular, Signify’s construction diverges from Stingray’s construction by adding the limitation that the times slots are reserved “*for the duration of that link across a series of frames.*” Nowhere

in the '986 patent specification or prosecution history is it stated that the semi-permanent time slots are reserved either (1) “for the duration of that link” or (2) “across a series of frames.”

Indeed, Signify’s additional requirements are contrary to the disclosure of the '986 patent and exclude preferred embodiments of the claimed invention. For example, the patent explains that the “controller 18 includes a semi-permanent time slot unit 18a for scheduling a respective semipermanent time slot for *each* time frame for establishing a communication link with each neighboring mobile node.” '986 patent at 7:50-53 (emphasis added). The patent explicitly focuses on the allocation of semi-permanent time slots for *each* frame, not “across a series of frames.” The patent never discusses the reservation of a time slot across multiple frames.

Further, the '986 patent does not necessarily reserve a semi-permanent time slot for the entire duration of a link. To the contrary, a key aspect of the invention is that the time slot allocated to a communications link may be re-allocated during the existence of that link to accommodate changes in link quality or data priority: “the pair of mobile nodes may cooperate to re-allocate the additional communication link to a new semi-permanent time slot within the second period if the additional communication link is of the first or second quality during the semi-permanent time slot.” *Id.* at 5:26-30; *see also* 53:32-35 (“the mobile nodes cooperate to re-allocate the communication link to a new time slot within a first time period if the communication link is of marginal quality during a given time slot.”) Signify’s requirement that a semi-permanent time slot be reserved for the entire duration of the link prevents the re-allocation of that link to a *new* time slot, as explicitly described throughout the '986 patent. Signify’s additional limitations are unsupported by the intrinsic record and should be rejected for excluding embodiments.

E. “demand assigned time slots” (Claims 9 and 25 of the '986 patent)

Stingray’s Construction	Signify’s Construction
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“time slots allocated based on utilization or data priority”	“time slots utilized by nodes to send additional data over links for which semi-permanent time slots also have been allocated in response to the link utilization metrics”
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The meaning of the term “demand assigned time slots” is generally a plain and ordinary meaning—time slots that are allocated based on an additional demand for those slots. The measure of demand is described throughout the ’986 patent to be based on link utilization and/or data priority levels. *See, e.g.*, ’986 patent at 2:35-40 (“the controller may . . . re-allocate the demand assigned time slots *based upon the link utilization metrics for each data priority level* for each additional communication link and the data priority levels.”) (emphasis added). Stingray’s construction is a straightforward reflection of the meaning of this term as provided by the patent.

Signify’s construction adds limitations that are neither in the plain meaning of the term nor supported by the ’986 patent. Signify’s construction improperly requires that: (1) demand assigned time slots can *only* be allocated for links that also have semi-permanent time slots and (2) **semi-permanent** time-slots are further restricted to be allocated *in response to the link utilization metrics*. In the first case, Signify’s restriction is contradicted by the teachings of the patent specification which describes embodiments allocating demand assigned time slots without first allocating semi-permanent time slots to those links. *See, e.g., id.* at 5:16-19 (“The at least one time slot may be at least one demand assigned time slot, and the pair of mobile nodes may also establish an additional communication link during a semi-permanent time slot.”). Secondly, Signify’s requirement that the “semi-permanent time slots” be allocated “in response to the link utilization metrics” is both improper and erroneous. The claim language and the patent specification make clear that the demand assigned time slots are allocated in response to link utilization metrics, *not* the semi-permanent time slots. Signify’s flawed construction should be rejected.

F. “link utilization metrics” (Claims 9 and 25 of the ’986 patent)

Stingray’s Construction	Signify’s Construction
“measures of link quality, usage, or capacity”	“measurements associated with a link based upon that link’s usage or demand”

The ’986 patent discusses link utilization metrics being based on each of quality (*e.g.*, 4:46-5:30), usage (*e.g.*, 39:19-35), and capacity (*e.g.*, 2:35-67). Signify agrees that the link utilization metrics can be a measure of “usage,” but substitutes the less accurate “demand” for Stingray’s well-supported “quality” and “capacity.” While the patent discusses “demand” as a link utilization metric, “demand” has substantial overlap with “usage” and does not capture the additional metrics discussed by the ’986 patent that include measures of both link quality and link capacity. *See* ’986 patent at 4:46-5:30, 2:35-67. Stingray’s construction more accurately reflects the full scope of link utilization metrics disclosed by the ’986 patent.

G. “link metric” (Claim 13 of the ’310 patent)

Stingray’s Construction	Signify’s Construction
“measure of a link attribute (such as delay, capacity, available capacity, or reliability)”	Indefinite.

Despite construing “link utilization metric” as a definite term in the ’986 patent, here Signify contends that the very similar “link metric” is indefinite. “Link metric” as used in the ’310 patent is clearly broader than “link utilization metric,” but the broader meaning does not render the term unbounded. Indeed, “link metric” is easily understood by a person of ordinary skill in the art to represent a “measure of a link attribute.” Definiteness does not require an enumeration of all possible link metrics. “Link metric” conveys “with reasonable certainty” the scope of this term to a person of ordinary skill in the art. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014); Madisetti Decl., ¶¶ 84-85. The patent speaks to the breadth of the term, noting that “link metrics” can include “a variety of measures” and assists the understanding of a person of skill in the art by providing examples of such metrics: “[i]mproved metrics can include a variety of

measures such as link delay, link capacity, link available capacity, link reliability.” ’310 patent at 7:12-17. The patent further provides specific calculations and formulas for exemplary link metrics. *See, e.g., id.* at 7:23-28. With the provided explanation and examples, and with the additional context of Claim 13 which recites the “link metric” for use in “ranking of discovered routes,” a person of skill in the art would understand the meaning and scope of a “link metric” with reasonable certainty. As taught by the ’310 patent, “link metric” should be construed as a “measure of a link attribute (such as delay, capacity, available capacity, or reliability).”

H. “routes” (Claims 13 of the ’310 patent)

Stingray’s Construction	Signify’s Construction
“one or more communication links between two nodes”	Plain and ordinary meaning

The plain and ordinary meaning of the term “routes” in the context of the ’310 patent is “one or more communication links between two nodes.” Signify agrees that this term should have its plain meaning but provides no indication of what that plain meaning is. The ’310 patent uses

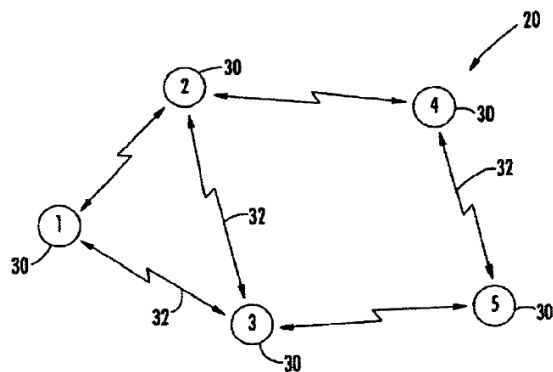


FIG. 1

the term “route” to refer to a communication path between two nodes. *See, e.g.,* ’310 patent at 6:48-58. And that path may span multiple links, but also may consist of only a single link if the two nodes are adjacent. Using FIG. 1 of the ’310 as an example, there are multiple routes between nodes 1 and 2. A

first route consists of only the single link between node 1 and 2. A second route between nodes 1 and 2 would consist of the combined links between nodes 1 and 3 and between nodes 2 and 3. Stingray’s proposed construction is consistent with this plain meaning of the term “routes.”

I. “operating in a contention-free mode” and “contention-free periods”/ “CFPs” (Claims 24 and 55 of the ’117 patent)

“operating in a contention-free mode”	
Stingray’s Construction	Signify’s Construction
“operating in a manner wherein channel usage is controlled such that nodes do not need to contend for channel access”	“operating with channel usage controlled by a designated control node without contending for channel access”
“contention-free periods”/ “CFPs”	
Stingray’s Construction	Signify’s Construction
“period(s) designated for operation in a contention-free mode”	“a period of time during which channel usage is controlled by a designated control node and nodes do not contend for channel access”

The parties’ respective constructions of “operating in a contention-free mode” generally agree other than Signify’s insertion of “a designated control node.” This attempt to add an unrecited claim element to Claims 24 and 55 is unsupported and should be rejected. The ’117 patent states that network nodes “may operate in contention or contention-free modes.” ’117 patent, 7:6-27; 9:26-39. In a “contention mode,” “all network nodes are required to contend for access to the particular channel.” *Id.* In contrast, a node can operate in a contention-free mode “[d]uring a contention-free period (CFP),” when “channel usage is controlled” which “eliminates the need for nodes to contend for channel access.” *Id.* Stingray’s construction is fully supported and refrains from adding improper limitations to the claims.

Signify, improperly adds a limitation to the claims through its construction of “operating in a contention-free mode” and “contention-free period”/“CFP”: requiring that “channel usage” must be “controlled by a *designated control node*.” See Dkt. No. 53, Ex. B at pp. 19-20. Though the ’117 patent discloses in one embodiment that “channel usage is controlled by a designated control node,” the asserted claims, do not recite a “designated control node” and do not provide any textual basis to limit the scope of the claims to an embodiment requiring a “designated control node.” ’117 patent, 7:14-17. Indeed, the “designated control node” is described only for particular

embodiments where “MANETs hav[e] nodes arranged in groups or clusters.” Nothing in the claims indicates that they should be limited to such embodiments. *See Liebel-Flarsheim*, 358 F.3d at 905-06 (“[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.”). Signify’s construction further introduces ambiguity by introducing “control node” where the claim recites no such node.

Because Signify incorporates its construction of “operating in a contention-free mode” into its construction of “contention-free periods,” the parties generally agree this it is appropriate to construe “contention-free periods” to relate back to “operating in a contention-free mode.” It should be undisputed that a contention-free period is a period where a node is designated to operate in a contention-free mode. For that reason, Stingray’s construction should be adopted.

J. “intrusion alert” (Claims 24 and 55 of the ’117 patent; Claims 12 and 51 of the ’678 patent)

Stingray’s Construction	Signify’s Construction
“a <i>notification</i> indicating detection of an anomaly or abnormal event”	“a <i>notification</i> generated and sent by the policing node(s) upon detecting an attempted intrusion”

Stingray construes “intrusion alert” consistent with the patent specification and the plain meaning of the term. Signify’s construction of “intrusion alert” is merely a blatant attempt to inject unsupported limitations in the claims. Indeed, Signify fails to offer even offer a construction of “intrusion” as part of its proposal. The parties appear to agree that an “alert” is a “notification.” And based on the explicit disclosure of the ’117 and ’678 patents, Stingray construes an “intrusion” to be “detection of an anomaly or abnormal event.” *See* ’117 patent, 2:4-9 (“intrusion detection is based upon anomaly detections, such as the detection of abnormal updates to routing updates to routing tables or anomalies in certain network layers, such as with media access control (MAC) layer protocols.”). Notably, even Signify’s offered extrinsic evidence corroborates Stingray’s

construction. *See* Dkt. No. 53, Ex. B at p. 22 (*Encyclopedia of Technology Terms*: “Intrusion detection functions include...analysis of ***abnormal activity patterns***,” attached as Exhibit L).

The large variety of events that would trigger an “intrusion alert” provided as examples by the specification indicates the intended breadth of the term: “frame check sequence (FCS) errors from a given MAC address,” “detecting a certain predetermined number of failed attempts to authenticate a particular MAC address,” “detect NAV [network allocation vector] value outside of the allotted amount of time,” “detection of a node operating in contention-free mode outside of a CFP,” “detecting transmissions within [an] unauthorized period” of time,” “detect integrity check values which do not correspond with their respective data packets,” “detect usage of non-consecutive MAC sequence numbers by a node,” “detecting a threshold number of collisions of the predetermined packet type,” “if multiple terminals lay claim to the same MAC address simultaneously or relatively closely to one another, then either an error has occurred or one of the nodes is a rouge node.” *See, e.g.* ’117 patent, 2:29-3:60; 5:65-6:9, 19-47; 7:3-5; 7:6-33; 7:41-33; 7:62-64; 8:5-9, 18-20, 34-44, 52-55; 8:65-9:1; 9:21-23, 30-33, 45-48, 57-59; 10:9-12, 19-22, 37-45; 14:6-17. Each of these conditions for generating an intrusion alert (disclosed as examples in the ’117 and ’678 patents) would be understood by a POSITA as abnormal or anomalous events that would “indicate that this node [that is creating the event] is not an authorized node.” *See id.* at 7:6-27. Stingray’s proposed construction accurately reflects the intended scope of this term and should be adopted.

Signify’s construction of “intrusion alert,” on the other hand, is no construction at all; but is merely a circular reference to the claim term itself stating essentially that an “intrusion alert” is a “notification” concerning “an attempted intrusion.” Signify fails to offer a construction for “intrusion,” thereby rendering its construction unhelpful. Instead, Signify’s construction again

serves only its objective to improperly narrow the claims by adding limitations. *See Liebel-Flarsheim*, 358 F.3d at 905-06. Here, Signify requires that the “intrusion alert” be “sent by the policing node.” This added limitation lacks any support in the claim itself, and is, therefore, merely an improper attempt to import limitations from the specification.

K. “encrypting both address and data information” and “decrypting both the address and data information” (Claim 1 of the ’572 patent)

“encrypting both address and data information”	
Stingray’s Construction	Signify’s Construction
Plain and ordinary meaning.	“reversibly encoding both MAC address and MAC data information to protect from reading without decryption”
“decrypting both the address and data information”	
Stingray’s Construction	Signify’s Construction
Plain and ordinary meaning.	“recovering, upon reception, both the MAC address and the MAC data information that was encrypted”

The claimed steps of “encrypting both address and data information” and “decrypting both the address and data information” would have been well-understood to a person of ordinary skill in the art at the time of the invention and therefore do not require explicit construction. Signify, on the other hand, seeks to inject an unnecessary and unsupported limitation into the phrase “address and data information” by suggesting that the claims require that such be “MAC address and MAC data.” There is no suggestion in the record that would lead a POSITA to depart from the plain and ordinary meaning of those terms such that the address and data must be that of the media access controller (MAC). *See GE Lighting Solutions*, 750 F.3d at 1309 (“[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal.”). Of relevance, the specification states “the cryptography circuit 70 may encrypt both address and data information for transmission, and decrypt both address and data information upon reception.” ’572 patent, 4:21-24; *see also* 6:3-39. Signify relies on the specification stating,

“a higher level of security may be provided by the encryption of the address and control portions of the transmitted packet contained within the MAC generated header.” *See* ’572 patent, 2:7-13; *see also* Dkt. No. 53, Ex. B at p. 37. This statement merely provides one example of the type of address and data information to be encrypted and decrypted but does not limit the claims to that one embodiment. And, importantly, neither the claims nor specification use the term “MAC address” or “MAC data,” which Signify leaves undefined. Tellingly, when proposing an alternative construction of “cryptography circuit,” Signify does not propose that this circuit encrypt or decrypt a “MAC address” or “MAC data.” *See* Dkt. No. 53, Ex. B at p. 35. Indeed, Signify provides no evidence that the specification or prosecution history compels departure from plain ordinary meaning of the claim terms. Thus, the Court should adopt the plain and ordinary meaning of these terms.

L. “monitoring link performance on a first channel” (Claim 1 of the ’961 patent)

Stingray’s Construction	Signify’s Construction
Plain and ordinary meaning.	“on an ongoing and recurring basis, analyzing link performance of the first channel”

The term “monitoring link performance on a first channel” requires no explicit construction because its plain and ordinary meaning is well understood by a person of ordinary skill in the art. Signify’s construction concedes that “link performance on a first channel” requires no construction. But instead of applying the plain and ordinary meaning of “monitoring,” Signify attempts to change the meaning to “analyzing on an ongoing and recurring basis.” This meaning does not comport with the plain meaning of “monitoring,” as established even by the dictionary definitions cited by Signify. “Analyzing” is simply not the same as “monitoring,” and it is not a term used in the ’961 patent. The dictionaries cited by Signify use an array of terms to describe “monitoring:” “listening,” “observing,” “checking,” and “keeping a continuous record.” None offer “analyzing” as a description for “monitoring.” And three out of the four definitions cited do

not restrict the meaning to a repetition or ongoing timeframe, as Signify’s construction requires. Signify’s construction fails to comport with the plain and ordinary meaning. The dictionaries cited by Signify provide no consensus or clarity that isn’t already present in the term “monitoring,” and therefore, the term does not benefit from construction.

M. Claim Limitations Alleged To Be Governed by 35 U.S.C. § 112 ¶ 6.

Signify’s contention that five claim limitations are means-plus-function claim terms under 35 U.S.C. § 112 ¶ 6 should be rejected in each case. None of the terms alleged to be governed by § 112 ¶ 6 include the use of the word “means,” and are, therefore, presumed *not* to be means-plus-function limitations. *Personalized Media*, 161 F.3d at 703-04. Each of the limitations recites sufficiently definite structure for performing the claimed functions. Signify attempts to invalidate the claims by improperly stretching the applicability of the law in view of the Federal Circuit’s *Williamson* ruling that overruled the “strong” presumption that had previously been applied based on the use of the term “means.” *See Williamson*, 792 F.3d at 1349. However, that presumption and Signify’s burden to overcome that presumption still applies. *Id.* In each case discussed below, Signify cannot meet that burden, even under the “balanced analytical scale” of *Williamson*. *See id.*

1. The “route discovery unit...” and “route selection unit...” of Claim 18 of the ’426 patent

Claim Term	Stingray’s Construction	Signify’s Construction
Claim 18: “a route discovery unit to transmit route requests over each of the plurality of electrically separate channels to discover routing to a destination node”	<p>Plain and ordinary meaning.</p> <p><u>Alternatively, if governed by § 112 ¶ 6:</u></p> <p><u>Function:</u> transmit route requests over each of the plurality of electrically separate channels to discover routing to a destination node</p> <p><u>Structure:</u> Figs. 6-8; ’426 patent, 4:15-55; 5:3-31; 5:49-6:13; 6:14-31; 6:32-54; 6:32-44. 7:7-22; 8:51-67.</p>	<p>Governed by § 112 ¶ 6:</p> <p><u>Function:</u> transmit route requests of each of the plurality of electrically separate channels to discover routing to a destination node</p> <p><u>Structure:</u> Indefinite for lack of corresponding structure.</p>

Claim 18: “a route selection unit to select a route to the destination node on at least one of the plurality of electrically separate channels”	<p>Plain and ordinary meaning.</p> <p><u>Alternatively, if governed by § 112 ¶ 6:</u></p> <p><u>Function:</u> select a route to the destination node on at least one of the plurality of electrically separate channels</p> <p><u>Structure:</u> Figs. 6-8; ’426 patent, 4:15-55; 5:49-6:13; 6:14-54; 7:7-22; 8:51-67.</p>	<p>Governed by § 112, ¶ 6.</p> <p><u>Function:</u> select a route to the destination node on at least one of the plurality of electrically separate channels</p> <p><u>Structure:</u> Indefinite for lack of corresponding structure.</p>
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Claim 18 of the ’426 patent recites a “route discovery unit” and a “route selection unit” that perform recited functions, but neither utilize the word “means,” and are, therefore, presumed *not* to be means-plus-function limitations. In asserting that pre-AIA 35 U.S.C. § 112 ¶ 6 applies, Signify fails to address that the “route discovery unit” and “route selection unit” are a component of the recited “controller” of claim 18. The “units” share structure and interact with other components, including the “controller,” such that they connote sufficient structure to a POSITA.

The term “unit” as used in claim 18 is not generic or a nonce word. Much like the term “computing unit” interpreted in the *Inventio AG* case, “route discovery unit” and “route selection unit” each connotes well-understood structure having sufficient definition within the art. *See Inventio AG v. ThyssenKrupp Elevator Americas Corp.*, 649 F.3d 1350, 1359 (Fed. Cir. 2011), *overruled on other grounds by Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015) (finding that the “computing unit” connoted sufficiently definite structure because the claims elaborated that the computing unit was connected to other claimed structure and operated with such structure to perform the claimed operations of the invention); *see also* Madisetti Decl., ¶¶ 39, 47. For example, the claims themselves recite that the controller “route[s] communications via the communications device.” Such communications include the “route requests,” which are “transmit[ted]” by the “route discovery unit” along “route[s] to the destination node” “select[ed] by the “route selection unit.” *See* ’426 patent, 8:51-67.

Furthermore, a “controller,” to which each “unit” is connected, is a common place structure that is sufficient to avoid application of § 112, ¶ 6. *See Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014, 1019 (Fed. Cir. 2017) (“[I]t is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure.”) (internal quotation omitted). “[A]s a general matter, ‘controller’ describes a known class of structures and does not signal the use of means-plus function claiming.” *See Sysmex Corp. v. Beckman Coulter, Inc.*, No. CV 19-1642-RGA-CJB, 2021 WL 1259710, at *4 (D. Del. Apr. 6, 2021); *see also Va. Innovation Scis., Inc. v. Amazon.com, Inc.*, Civil Action No. 4:18-cv-474, 2019 WL 4259020, at *13-15 (E.D. Tex. Sept. 9, 2019); *Barkan Wireless IP Holdings, L.P. v. Samsung Elecs. Co.*, No. 2:18-CV-28-JRG, 2019 WL 49790, at *22-23 (E.D. Tex. Feb. 7, 2019); *Maxell Ltd. v. Huawei Device USA Inc.*, 297 F. Supp. 3d 668, 748 (E.D. Tex. 2018).

The specification further informs the claims by disclosing the corresponding structure (should the court decide that § 112, ¶ 6 applies) and describing *how* each operation is implemented by the “route discovery unit” and “route selection unit.” For example, the controller 44 includes a “route discovery unit 50 to transmit route requests RREQ over each of the plurality of channels to discover routing to the destination node D.” ’426 patent, 6:45-65. “The route discovery unit 50 may send the route request over each of the plurality of channels sequentially, and the route request may include a channel identifier.” *Id.* Also, the controller 44 includes “a route selection unit 52 to select a route to the destination node on at least one of the plurality of channels.” *Id.* “The selected route to the destination node may include more than one of the plurality of channels.” *Id.* Thus, not only do the claims recite sufficient and corresponding structure for the “route discovery unit” and “route selection unit,” the specification further informs the claimed operations such that a person of ordinary skill can easily understand the structure, scope, and definition of the claimed

limitations. Accordingly, each of the above claim limitations reciting a “route discovery unit” and a “route selection unit” is not a means-plus-function limitation requiring construction under § 112 ¶ 6 and each should be afforded its plain and ordinary meaning. Such description along with Dr. Madisetti’s testimony would further support sufficient and definite structure should the Court find that § 112 ¶ 6 applies. *See* Madisetti Decl., ¶¶ 36-54.

2. The “policing node...” of Claim 24 of the ’117 patent and the “policing station...” of Claim 12 the ’678 patent

Claim Term	Stingray’s Construction	Signify’s Construction
“a policing node for detecting intrusion into the MANET by monitoring transmissions among said plurality of nodes to detect contention-free mode operation outside of a CFP; and generating an intrusion alert based upon detecting contention-free mode operation outside a CFP” (Claim 24 of the ’117 patent)	Plain and ordinary meaning; this term is not subject to Pre-AIA § 112 ¶ 6: <u>Alternatively, if governed by § 112 ¶ 6:</u> <u>Function:</u> detecting intrusion into the MANET <u>Structure:</u> ’117 patent, 5:30-6:18; 7:6-33; 9:25-39; 10:46-58; 14:6-18; Figures 4 and 14.	Governed by § 112 ¶ 6: <u>Function:</u> detecting intrusion into the MANET by monitoring transmissions among said plurality of nodes to detect contention-free mode operation outside of a CFP; and generating an intrusion alert based upon detecting contention-free mode operation outside a CFP <u>Structure:</u> Indefinite for lack of corresponding structure.
“a policing station for detecting intrusions into the wireless network by monitoring transmissions among said plurality of stations to detect failed attempts to authenticate MAC addresses; and generating an intrusion alert based upon detecting a number of failed attempts to authenticate a MAC address” (Claim 12 of the ’678 patent)	Plain and ordinary meaning; this term is not subject to Pre-AIA § 112 ¶ 6: <u>Alternatively, if governed by 35 § 112 ¶ 6:</u> <u>Function:</u> detecting intrusions into the wireless network <u>Structure:</u> ’678 patent, 5:35-44; 5:45-6:7; 6:8-31; 6:45-60; 9:13-23; 9:54-67; 12:41-55; Figures 2 and 12.	Governed by § 112 ¶ 6: <u>Function:</u> detecting intrusions into the wireless network by monitoring transmissions among said plurality of stations to detect failed attempts to authenticate MAC addresses; and generating an intrusion alert based upon detecting a number of failed attempts to authenticate a MAC address <u>Structure:</u> Indefinite for lack of corresponding structure.

The asserted claims recite a “policing node” or a “policing station” that perform recited functions, respectively, but neither utilize the use of the word “means,” and are, therefore, presumed not to be means-plus-function limitations. Signify, on the other hand, asserts that pre-AIA 35 U.S.C. § 112 ¶ 6 applies to these terms. But each term clearly connotes structure and each is coupled to claim language describing the operation of that “structure,” such that each would be understood byPOSITAs to have a sufficiently definite meaning as the name for structure. *See Williamson*, 792 F.3d at 1349; *Linear Tech*, 379 F.3d at 1320.

Neither the term “policing node” nor the term “policing station” is a generic or nonce word, because each connotes a well-understood structure having sufficient definition within the art. Specifically, a person of ordinary skill in the art would understand that a node, as used in Claim 24, is, for example, an “electronic device(s) or equivalent software implemented on such an electronic device that is part of the claimed MANET” and a “station,” as used in Claim 12, is “an electronic device(s) or equivalent software implemented on such an electronic device that is part of the claimed wireless network.” *See, e.g., Madisetti Decl.*, ¶¶ 58, 66.

Indeed, even evidence submitted by Signify confirms that these terms connote structure. *See* Dkt. No. 53, Ex. B at pp. 28-29 (citing SIGNIFYCC_00000793 (“A MANET consists of mobile platforms (e.g., a router with multiple hosts and wireless communication devices)—herein simply referred to as ‘*nodes*’...”); SIGNIFYCC_00000828 (“The purpose of this standard is to provide wireless connectivity to automatic machinery, equipment, or *stations*...”), each attached herein as Exhibits J and K) (emphasis added). And significantly, Signify has provided a construction of “mobile node(s)” elsewhere in these proceedings without arguing that such term is generic or cannot be understood. Indeed, the terms “node” and “station” are used throughout the patent specifications, and even in the technical standards cited by Signify. In each of those

contexts, it is not questioned that a person of ordinary skill in the art would understand the meaning and structure of those terms. Adding the term “policing” to describe a “node” or “station” does not lessen the structure connoted by those terms. Instead, it provides an “additional adjectival qualification[] further identifying sufficient structure to perform the claimed functions to one of ordinary skill in the art.” *Apex Inc.*, 325 F.3d at 1374.

The claims themselves include the “objectives or operations” of the “policing node” or “policing station.” See *Linear Tech.*, 379 F.3d 1311, 1320-21 (citing that disputed structural term that was accompanied by claim language reciting “objectives and operations” of that structure supported denying application of § 112 ¶ 6). For example, claim 24 of the ’117 patent provides that the policing node is “for detecting intrusions into the MANET.” Such function is accomplished “by monitoring transmissions among said plurality of nodes to detect contention-free mode operation outside of a CFP; and generating an intrusion alert based upon detecting contention-free mode operation outside a CFP.” In claim 12 of the ’678 patent, the policing station is “for detecting intrusions into the wireless network.” Such function is accomplished “by monitoring transmissions among said plurality of stations to detect failed attempts to authenticate MAC addresses; and generating an intrusion alert based upon detecting a number of failed attempts to authenticate a MAC address.” These operations found within the claim limitations and tied to the recited “policing” “node” or “station” are specific and inform the structure of the “policing” “node” or “station” such that POSITAs would find sufficient and definitive structure in the limitations.

The specification further informs the claims by disclosing the corresponding structure (should the court decide that § 112, ¶ 6 applies) and describing *how* each operation is implemented by the well-known structure—“policing node” and “policing station.” See *Advanced Marketing*, 2016 WL 1741396 at *20. For example, the ’117 patent specification states that “the MANET 10

illustratively *includes one or more policing nodes 13* for detecting intrusions into the network by a rogue node 14.” ’117 patent, 5:65-67; 7:18-23. Similarly, the “policing station” of the ’678 patent may be “installed on one or more existing nodes in a wireless LAN/MAN where intrusion detection is desired.” ’678 patent, 9:54-67. In other words, the policing node may be another node in the MANET, in the context of the ’117 patent, or may be another station in the wireless network disclosed in the ’678 patent—each having the same well-known structure of a node or station in a wireless communication network. *See* Madisetti Decl, ¶ 58-59 (citing ’117 patent, 10:52-59; Fig. 4); ¶¶ 66-67 (citing ’678 patent, 9:54-67). Moreover, the term “policing” provides an “additional adjectival qualification[] further identifying sufficient structure to perform the claimed functions to one of ordinary skill in the art.” *See Apex Inc.*, 325 F.3d at 1374. Namely, how the “node” or “station,” a well-known network structure, accomplishes “policing” is set out in the respective claims, and is supported by the specification.

In one example embodiment, the policing node 43 may “detect intrusions into the MANET 40 by monitoring transmissions among the nodes 41, 42 to detect contention-free mode operation outside of a CFP” and may generate “an intrusion alert based upon on such detection.” *Id.* at 7:6-27; *see also id.* at 6:4-9; 7:34-43; 7:55-58; 8:5-20; 8:45-49; 10:52-11:2; Figs. 4, 14. Similarly in the ’678 patent, “the policing station 23 detects intrusions into the wireless network 20 by monitoring transmissions among the stations 21, 22 to detect failed attempts to authenticate MAC addresses” and upon such detection “generate[s] an intrusion alert.” ’678 patent, 6:45-60; *see also* 6:8-11, 15-16; 7:9-14, 29-34, 46-50, 61-65; 8:1-4, 9-16, 17-23, 54-58, 10:60-67; 11:18-25; Figs. 2, 12. Thus, not only do the claims recite sufficient structure for the “policing node” and “policing station,” the specification further informs the claimed operations such that a POSITA can easily understand the corresponding structure, scope, and definition of the claimed limitations.

Accordingly, each of the above claim limitations reciting a “policing node” or “policing station” is not a means-plus-function limitation requiring construction under § 112 ¶ 6 and each should be afforded its plain and ordinary meaning. Such description along with Dr. Madisetti’s testimony would further support sufficient and definite structure should the Court find that § 112 ¶ 6 applies. *See* Madisetti, ¶¶ 57-62 (addressing “policing node”), ¶¶ 65-70 (addressing “policing station”).

3. The “cryptography circuit...” of Claim 1 of the ’572 patent

Claim Term	Stingray’s Construction	Signify’s Construction
“a cryptography circuit carried by said housing and connected to said MAC and said wireless transceiver for encrypting both address and data information for transmission by at least adding a plurality of encrypting bits to both the address and the data information, and for decrypting both the address and the data information upon reception”	Plain and ordinary meaning; this term is not subject to pre-AIA § 112 ¶ 6. <u>Alternatively, if governed by Pre-AIA § 112 ¶ 6:</u> <u>Function:</u> encrypting both address and data information for transmission; and decrypting both the address and the data information upon reception <u>Structure:</u> ’572 patent, 3:37-57; 4:14-31; 5:20-25; 5:42-6:55; 6:65-7:35; 7:52-64; Figures 1-13.	Governed by § 112 ¶ 6 <u>Function:</u> encrypting both address and data information for transmission by at least adding a plurality of encrypting bits to both the address and the data information, and for decrypting both the address and the data information upon reception <u>Structure:</u> Indefinite for lack of corresponding structure.
If not governed by Pre-AIA 35 U.S.C. 112 Paragraph 6: “a cryptography circuit”	“a circuit capable of performing cryptography”	“a circuit employing an algorithm and cryptographic key and capable of encrypting and decrypting both address and data information for transmission”

The above claim limitation recites a well-known structure, “cryptography circuit,” that performs a function. Because that term connotes structure and is coupled to claim language describing the operation of that structure, it would be understood byPOSITAs to have a sufficiently definite meaning as the name for structure.

The term “cryptography circuit” is not generic or a nonce word. Instead, “cryptography circuit” connotes well-understood structure having sufficient definition within the art. *See, e.g.*, Madisetti Decl., ¶ 74 (“A person of ordinary skill in the art would understand that the term ‘circuit’ to mean an electronic circuit module” that is required by the claim to “encrypt and decrypt ‘both address and data information.’”). The Federal Circuit has held that “when the structure-connoting term ‘circuit’ is coupled with a description of the circuit’s operation, sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art, and § 112 P 6 presumptively will not apply.” *Linear Tech*, 379 F.3d at 1320 (internal footnote omitted); *see also Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1367-73 (Fed. Cir. 2003); *Google LLC v. Sonos, Inc.*, No. 20-CV-03845-EMC, 2021 WL 2321952, at *6 (N.D. Cal. June 7, 2021). Here, the term “cryptography” provides an “additional adjectival qualification[] further identifying sufficient structure to perform the claimed functions to one of ordinary skill in the art.” *Apex Inc.*, 325 F.3d at 1374. The “circuit” performs cryptography functions defined by the claims and supported by the specification.

The claims themselves include the “objectives or operations” of the “cryptography circuit.” *See Linear Tech.*, 379 F.3d 1311, 1320-21 (citing that disputed structural term accompanied by claim language reciting “objectives and operations” of that structure supported denying application of § 112 ¶ 6). For example, claim 1 provides that the cryptography circuit is “for encrypting both address and data information for transmission; and decrypting both the address and the data information upon reception” such encrypting function is accomplished “by at least adding a plurality of encrypting bits to both the address and the data information.” These operations found within the claim limitations and tied to the recited “cryptography circuit” are specific and inform the claimed structure such that POSITAs would find sufficient and definitive structure.

The specification further informs the claims by disclosing the corresponding structure (should the court decide that § 112, ¶ 6 applies) and describing *how* each operation is implemented by the well-known structure—“cryptography circuit.” The specification, for example, describes a “secure wireless LAN device 20,” which can be implemented, as merely one example, “in the form of a PC-card” as shown in Figures 1-6. See Figs. 1 and 2. The device 20 also includes “a cryptography circuit 70,” which includes a cryptography processor 72 and serial-to-parallel converter (CPLD) 71 connected to the MAC 60 and the cryptography processor. These elements of the cryptography circuit are shown in Figure 7. See ’572 patent, 3:37-57; 4:14-31; 5:20-25; 6:40-55). Critically, as an example, “[t]he cryptography circuit 70 may be provided, for example, by a SIERRA™ cryptographic module” and “[t]he cryptography processor 72 may be a Palisades ASIC.” See *id.* at 5:42-65; 5:66-6:55; 6:18-28; 6:65-7:35; Fig. 9. The specification further provides how the “cryptography circuit” performs the recited function by “encrypt[] both address and data information for transmission by at least adding a plurality of encrypting bits to both the address and the data information.” See *id.* at 4:20-30. The specification states, in one embodiment, that “the MAC 60 generates a payload 80 including a header 81, the data 82, and a CRC code 83” and “[t]his payload 80 is combined with the cryptography generated bits 85 and the baseband processor generated bits 84.” See *id.* at 5:26-52; Fig. 7. This, along with Dr. Madisetti’s testimony, would further support sufficient structure should the Court find that § 112, ¶ 6 applies. See Madisetti Decl., ¶¶ 72-81. And such citations to the specification would further support a construction of the term “cryptography circuit” as “circuit” that is “capable of performing cryptography.”

IV. CONCLUSION

For the reasons discussed above, Stingray respectfully requests that the Court adopt all of its proposed constructions and reject all of Signify’s constructions.

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was filed electronically in compliance with Local Rule CV-5(a). Therefore, this document was also served on all counsel who are deemed to have consented to electronic service on September 29, 2021.

/s/ Terry A. Saad